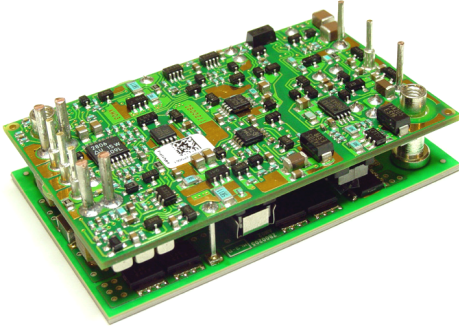


Product Brief: Powereta™ – Single Output High Current Double-P Quarter Brick

Powereta™ iQP Series Double-P Quarter Brick 48V Input, 5V/50A/250W DC Output



The Powereta™ iQP Series offers an industry standard Double-P quarter brick high current power module with true useable output power. The iQP series power modules are ideally suited for high-density distributed power architectures where the demands of voltage and substantial load mandate the creation of a robust local intermediate 5V distribution bus. Its 92% full load efficiency (93% at 70% load) and superior thermal performance make the iQP Series of power modules ideally suited for tight space and power-hungry applications in demanding thermal environments. This rugged building block is designed to serve as the core of your high reliability system. A wide output voltage trim range, -20 to +10%, and remote sensing are standard features enhancing versatility.

Features

- Standard Double-P Quarter Brick Pinout
- Size: 2.28" × 1.45" × 0.5"
- Up to 50A of output current
- Power density > 151W / in³
- Maximum efficiency – up to 94.5%
- Typical full load efficiency: 92%
- Output power – up to 250W in high ambient temperature, low airflow environments with minimal derating
- Wide output voltage trim range
- Industry standard output voltage trim
- Basic insulation – 1500Vdc
- Choice of remote on/off configuration
- Remote sense
- Constant switching frequency
- Latched output over-voltage protection
- Auto-recovery full protections:
 - Input under and over voltage
 - Output over-current
 - Output short circuit
 - Thermal limit
- UL 60950 (US and Canada), VDE 0805, CB scheme (IEC950) Safety markings and CE Mark (EN60950)
- Optional 0.110", 0.145", 0.180" pin length
- Optional non-latching OVP protection
- EMI: CISPR 22 A or B with external filter
- Multiple patents pending
- ISO9000 certified manufacturing facilities

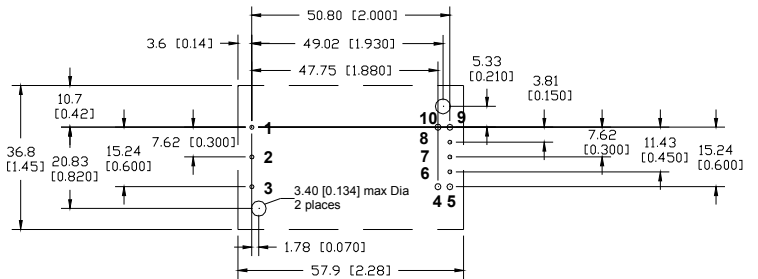
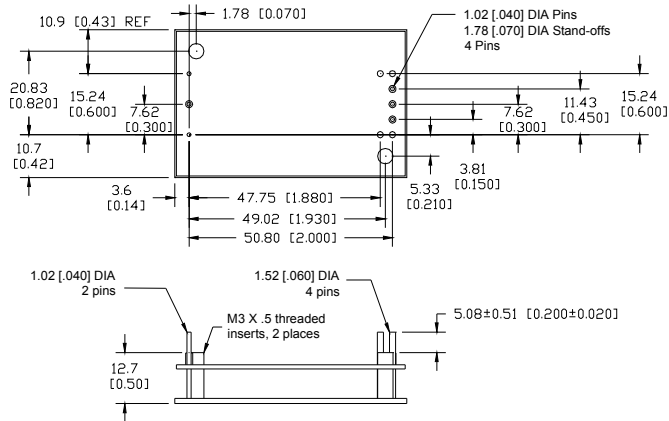
TDK Innoveta Base Product Code	Input Voltage	Output Voltage	Output Current	Efficiency 70%Load	Efficiency 100%Load
iQP48050A050V	36-75V	5V	50A	93%	92%

Typical Performance

Input Characteristics		
Operating input range	36-75V	
Transient input voltage	100V	100mS max
Turn-on voltage	34.7V	
Turn-off voltage	32.3V	
Maximum input current	8A	Input 0-75V, I _{o,max}
Output Characteristics		
Output voltage tolerance	+/- 3.3% max	Over line, load, and temp to end of life
Efficiency	92%	I _{o,max}
Line regulation	3 mV	Over rated input
Load regulation	3 mV	Over rated load
Start-up time	40 ms	On/Off to 90% V _o
Output voltage adjustment	80%-110%	%V _{o,nom}
Output ripple	80 mVp-p	20MHz bandwidth
Dynamic response		Load step 25% of I _{o,max}
Transient voltage	80 mV	slew rate =0.1A/us
Recovery time	200 μS	
Ripple frequency	250 kHz	Fixed
Protection		
Output over-current	108% of I _{o,rated}	Auto-recovery hiccup
Short circuit	Continuous protection	Auto-recovery hiccup
Output over-voltage	121% of V _{out,nom}	Latching
Thermal shutdown	126C	Auto recovery with hysteresis
Environmental		
Operating temperature, T _c	-40C to 112C	See full datasheet

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Dimensions are in mm [in]. Unless otherwise specified tolerances are: $x.x \pm 0.5$ [0.02], $x.xx \pm 0.25$ [0.010].



Recommended hole pattern (top view)

PIN	FUNCTION	PIN	FUNCTION
1	Vin (+)	4	Vo (-)
2	On/Off	5	Vo (-)
3	Vin (-)	6	Sense (-)
		7	Trim
		8	Sense (+)
		9	Vout (+)
		10	Vout (+)

Ordering Information

Product Identifier	Package Size	Platform	Input Voltage	Output Current/Power	Output Units	Main Output Voltage	# of Outputs	Safety Class	Feature Set
I	Q	P	48	050	A	050	V	- 0	05
TDK Innoveta	Quarter-Brick	Double-P	36-75V	050 – 50A	Amps	050 – 5V	Single		05 – Standard

Feature Set	On/Off Logic	OVP	Pin Length
00	Positive	Latch	0.145"
01	Negative	Latch	0.145"
02	Positive	Latch	0.110"
03	Negative	Latch	0.110"
04	Positive	Latch	0.200"
05	Negative	Latch	0.200"
06	Positive	Non-Latch	0.145"
07	Negative	Non-Latch	0.145"
08	Positive	Latch	0.180"
09	Negative	Latch	0.180"

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